

December 15 to 28, 2013 (Weeks 51 and 52)

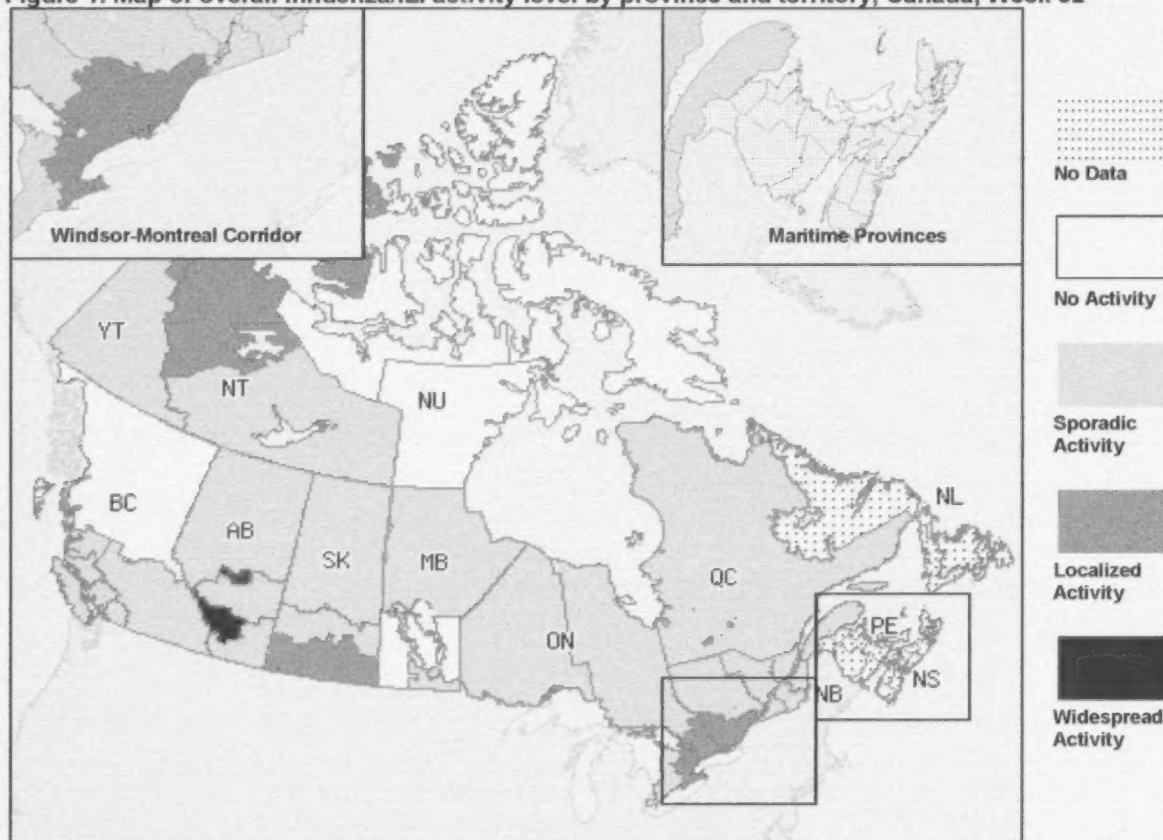
## Overall Summary

- Influenza activity in Canada continued to increase sharply in weeks 51 and 52 with increases in laboratory detections of influenza, ILI consultations, hospitalizations with influenza and prescriptions for influenza antivirals.
- Influenza A has been identified in >90% of cases this season, and A(H1N1)pdm09 remains the predominant subtype, representing approximately 90% of subtyped influenza viruses.
- A greater proportion of cases have been reported among adults 20-64 years of age compared to those ≥65 years of age, which is a change from the demographics of the 2012-13 season when A(H3N2) was predominant.

## Influenza/ILI Activity (geographic spread)

In weeks 51 and 52, the same two regions in Alberta reported widespread activity. In week 51, three regions in Ontario reported localized activity and in week 52 six regions (in SK(1), ON(4), and NT(1)) reported localized activity (Figure 1). However, no data was received for 20 regions in each of weeks 51 and 52.

Figure 1. Map of overall influenza/ILI activity level by province and territory, Canada, Week 52

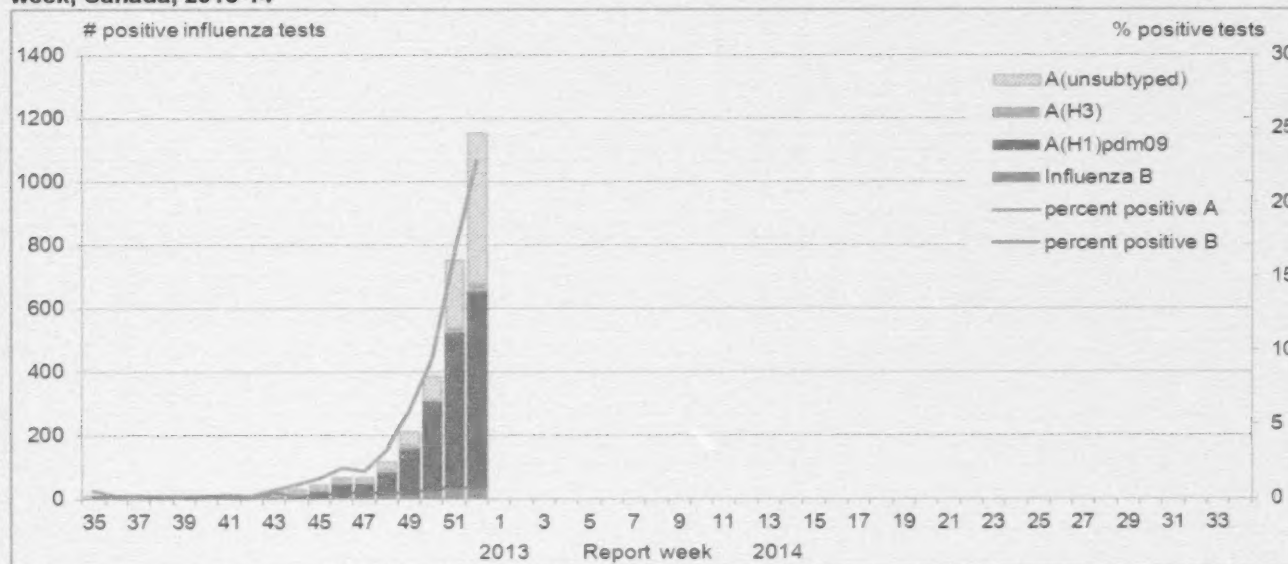


Note: Influenza/ILI activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates and reported outbreaks. Please refer to detailed definitions at the end of the report. Maps from previous weeks, including any retrospective updates, are available on the [FluWatch website](#).

## Influenza and Other Respiratory Virus Detections

The number of positive influenza tests continued to increase in weeks 51 and 52, from 382 in week 50 to 754 in week 51 and 1152 in week 52. The percentage of positive influenza tests increased to 17.3% in week 51 and 23.6% in week 52 (Figure 2). Cumulative influenza virus detections to date have been predominantly influenza A (94%). Among subtyped influenza A viruses, 94% (1731/1843) were A(H1N1)pdm09 (Table 1). Detailed information on age and type/subtype has been received for 2,819 cases to date this season. A significantly greater proportion of laboratory detections of influenza have been reported in adults 20-64 years of age compared to those  $\geq 65$  years of age this season compared to the 2012-13 season (Table 2). This is expected given the predominance of A(H1N1)pdm09 this season compared to 2012-13 when A(H3N2) was the dominant circulating subtype.

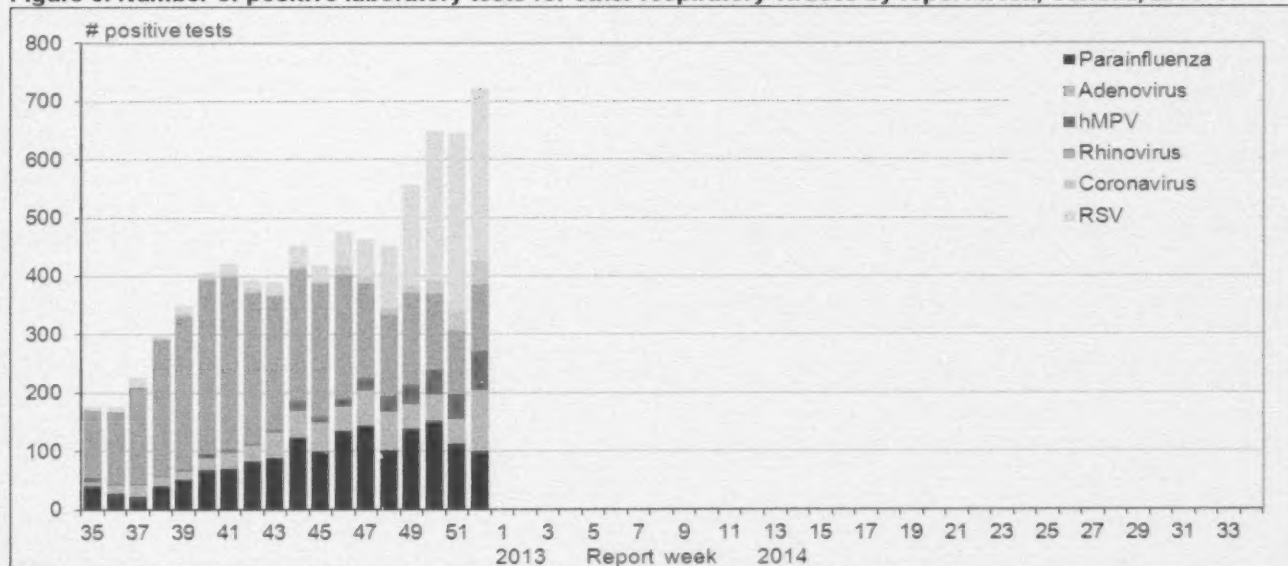
**Figure 2. Number of positive influenza tests and percentage of tests positive, by type, subtype and report week, Canada, 2013-14**



In weeks 51 and 52, the number of positive tests for RSV was stable. RSV was the second most frequently detected virus in week 52, after influenza. The number of positive tests for rhinovirus and parainfluenza decreased during this 2-week period, while detections of adenovirus, coronavirus and human metapneumovirus increased (Figure 3).

For more details, see the weekly [Respiratory Virus Detections in Canada Report](#).

**Figure 3. Number of positive laboratory tests for other respiratory viruses by report week, Canada, 2013-14**



RSV: Respiratory syncytial virus; hMPV: Human metapneumovirus

**Table 1. Weekly and cumulative numbers of positive influenza specimens by type, subtype and province, Canada, 2013-14**

| Reporting provinces <sup>1</sup> | Weekly (December 22 to December 28, 2013) |            |       |        |      | Cumulative (August 25, 2013 to December 28, 2013) |            |       |        |      |
|----------------------------------|-------------------------------------------|------------|-------|--------|------|---------------------------------------------------|------------|-------|--------|------|
|                                  | Influenza A                               |            |       |        | B    | Influenza A                                       |            |       |        | B    |
|                                  | A Total                                   | A(H1)pdm09 | A(H3) | A(UnS) |      | A Total                                           | A(H1)pdm09 | A(H3) | A(UnS) |      |
| BC                               | 66                                        | 39         | 5     | 22     | 2    | 229                                               | 134        | 15    | 80     | 10   |
| AB                               | 369                                       | 251        | 0     | 118    | 0    | 868                                               | 731        | 12    | 125    | 21   |
| SK                               | 84                                        | 39         | 0     | 45     | 0    | 167                                               | 92         | 0     | 75     | 0    |
| MB                               | 10                                        | 6          | 0     | 4      | 0    | 28                                                | 21         | 0     | 7      | 6    |
| ON                               | 387                                       | 256        | 17    | 114    | 5    | 1006                                              | 704        | 82    | 220    | 27   |
| QC                               | 179                                       | 24         | 0     | 155    | 28   | 365                                               | 31         | 1     | 331    | 102  |
| NB                               | 10                                        | 0          | 0     | 10     | 0    | 12                                                | 1          | 1     | 10     | 0    |
| NS                               | 4                                         | 0          | 0     | 4      | 0    | 8                                                 | 2          | 1     | 5      | 0    |
| PE                               | 0                                         | 0          | 0     | 0      | 0    | 1                                                 | 1          | 0     | 0      | 0    |
| NL                               | 6                                         | 5          | 0     | 1      | 2    | 15                                                | 14         | 0     | 1      | 4    |
| Canada                           | 1115                                      | 620        | 22    | 473    | 37   | 2699                                              | 1731       | 112   | 854    | 170  |
| Percentage <sup>2</sup>          | 96.8%                                     | 55.6%      | 2.0%  | 42.4%  | 3.2% | 94.1%                                             | 64.1%      | 4.1%  | 31.6%  | 5.9% |

**Table 2. Weekly and cumulative numbers of positive influenza specimens by type, subtype and age-group reported through case-based laboratory reporting<sup>3</sup>, Canada, 2013-14**

| Age groups (years)      | Weekly (December 22 to December 28, 2013) |            |       |         |      | Cumulative (August 25, 2013 to December 28, 2013) |            |       |         |      |                   |        |
|-------------------------|-------------------------------------------|------------|-------|---------|------|---------------------------------------------------|------------|-------|---------|------|-------------------|--------|
|                         | Influenza A                               |            |       |         | B    | Influenza A                                       |            |       |         | B    | Influenza A and B |        |
|                         | A Total                                   | A(H1)pdm09 | A(H3) | A (UnS) |      | A Total                                           | A(H1)pdm09 | A(H3) | A (UnS) |      | #                 | %      |
| <5                      | 152                                       | 68         | 0     | 84      | 4    | 483                                               | 266        | 15    | 202     | 37   | 520               | 18.3%  |
| 5-19                    | 54                                        | 24         | 0     | 30      | 5    | 236                                               | 162        | 6     | 68      | 37   | 273               | 9.6%   |
| 20-44                   | 271                                       | 132        | 3     | 136     | 7    | 817                                               | 496        | 11    | 310     | 39   | 856               | 30.1%  |
| 45-64                   | 196                                       | 85         | 1     | 110     | 2    | 687                                               | 400        | 16    | 271     | 52   | 739               | 26.0%  |
| 65+                     | 101                                       | 45         | 4     | 52      | 9    | 340                                               | 157        | 24    | 159     | 91   | 431               | 15.2%  |
| Unknown                 | 6                                         | 3          | 0     | 3       | 0    | 25                                                | 16         | 4     | 5       | 0    | 25                | 0.9%   |
| Total                   | 780                                       | 357        | 8     | 415     | 27   | 2588                                              | 1497       | 76    | 1015    | 256  | 2844              | 100.0% |
| Percentage <sup>2</sup> | 96.7%                                     | 45.8%      | 1.0%  | 53.2%   | 3.3% | 91.0%                                             | 57.8%      | 2.9%  | 39.2%   | 9.0% |                   |        |

<sup>1</sup> Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Cumulative data includes updates to previous weeks.

<sup>2</sup> Percentage of tests positive for sub-types of influenza A are a percentage of all influenza A detections.

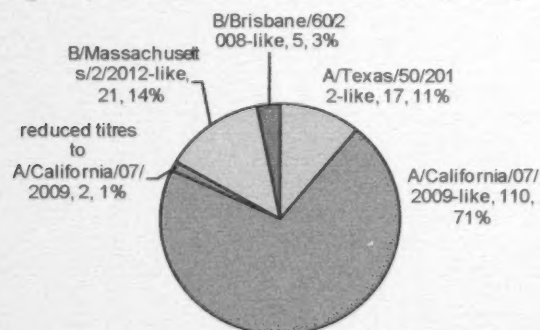
<sup>3</sup> Table 2 includes specimens for which demographic information was reported. These represent a subset of all positive influenza cases reported.

UnS: unsubtyped: The specimen was typed as influenza A, but no result for subtyping was available.

## Influenza Strain Characterizations

During the 2013-2014 influenza season, the National Microbiology Laboratory (NML) has antigenically characterized 155 influenza viruses [17 A(H3N2), 112 A(H1N1)pdm09 and 26 influenza B]. The vast majority (96.8%) of viruses were similar to the strains recommended by the WHO for the 2013-14 seasonal influenza vaccine. Two A(H1N1)pdm09 viruses showed reduced titres to antiserum against the reference A/California/07/2009 strain. Five influenza B viruses were similar to the strain recommended by the WHO for the 2011-12 vaccine (Figure 4).

**Figure 4. Influenza strain characterizations, Canada, 2013-14, N = 155**



The NML receives a proportion of the number of influenza positive specimens from provincial laboratories for strain characterization and antiviral resistance testing. Characterization data reflect the results of haemagglutination inhibition (HAI) testing compared to the reference influenza strains recommended by WHO.

The recommended components for the 2013-2014 northern hemisphere trivalent influenza vaccine include: an A/California/7/2009(H1N1)pdm09-like virus, an A(H3N2) virus antigenically like the cell-propagated prototype virus A/Victoria/361/2011b (e.g. A/Texas/50/2012), and a B/Massachusetts/2/2012-like virus (Yamagata lineage).

## Antiviral Resistance

During the 2013-2014 influenza season, NML has tested 135 influenza viruses for resistance to oseltamivir and for resistance to zanamivir, and all were sensitive. Sixty-nine influenza A viruses were tested for amantadine resistance, and all were resistant (Table 3).

**Table 3. Antiviral resistance by influenza virus type and subtype, Canada, 2013-14**

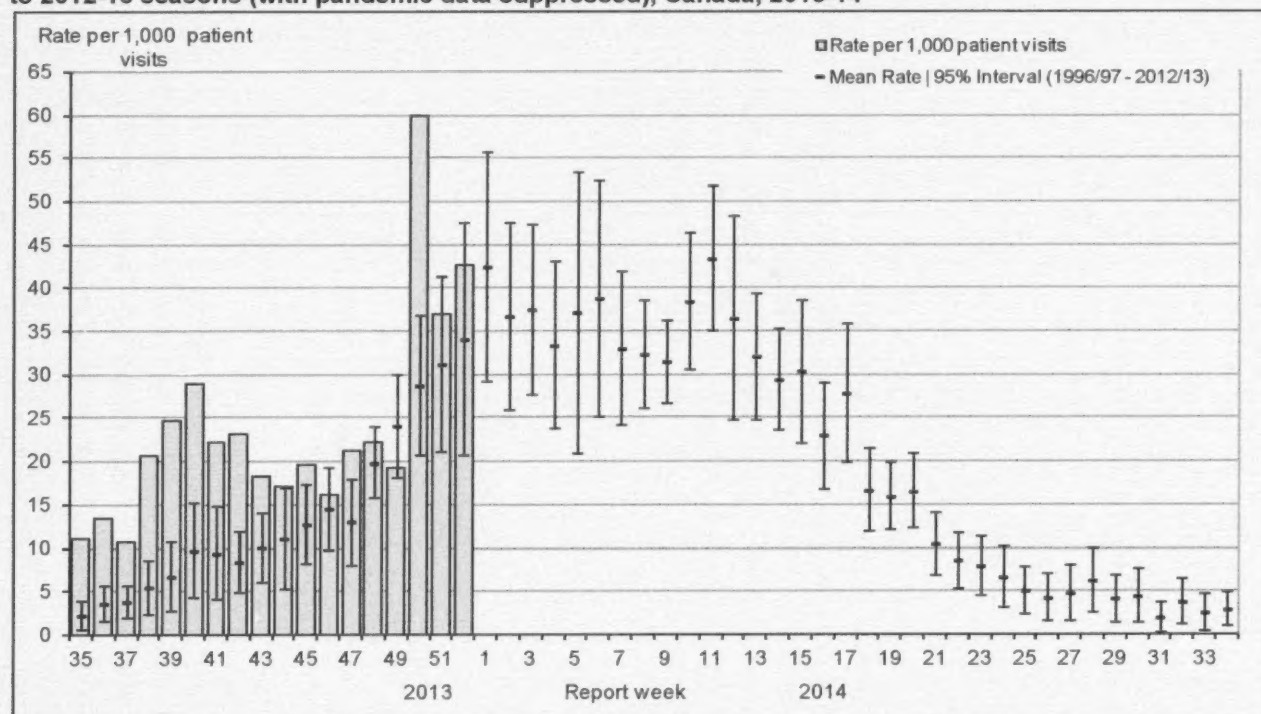
| Virus type and subtype | Oseltamivir |                 | Zanamivir  |                 | Amantadine      |                  |
|------------------------|-------------|-----------------|------------|-----------------|-----------------|------------------|
|                        | # tested    | # resistant (%) | # tested   | # resistant (%) | # tested        | # resistant (%)  |
| A (H3N2)               | 15          | 0               | 15         | 0               | 14              | 14 (100%)        |
| A (H1N1)               | 95          | 0               | 95         | 0               | 55              | 55 (100%)        |
| B                      | 25          | 0               | 25         | 0               | NA <sup>1</sup> | NA <sup>1</sup>  |
| <b>TOTAL</b>           | <b>135</b>  | <b>0</b>        | <b>135</b> | <b>0</b>        | <b>69</b>       | <b>69 (100%)</b> |

<sup>1</sup> NA – not applicable

## Influenza-like Illness Consultation Rate

The national influenza-like-illness (ILI) consultation rate jumped to 60.0/1,000 in week 50, returning to 37.0/1,000 in week 51 and increasing to 42.6/1,000 in week 52 (Figure 5).

**Figure 5. Influenza-like-illness (ILI) consultation rates by report week, compared to the 1996-97 through to 2012-13 seasons (with pandemic data suppressed), Canada, 2013-14**

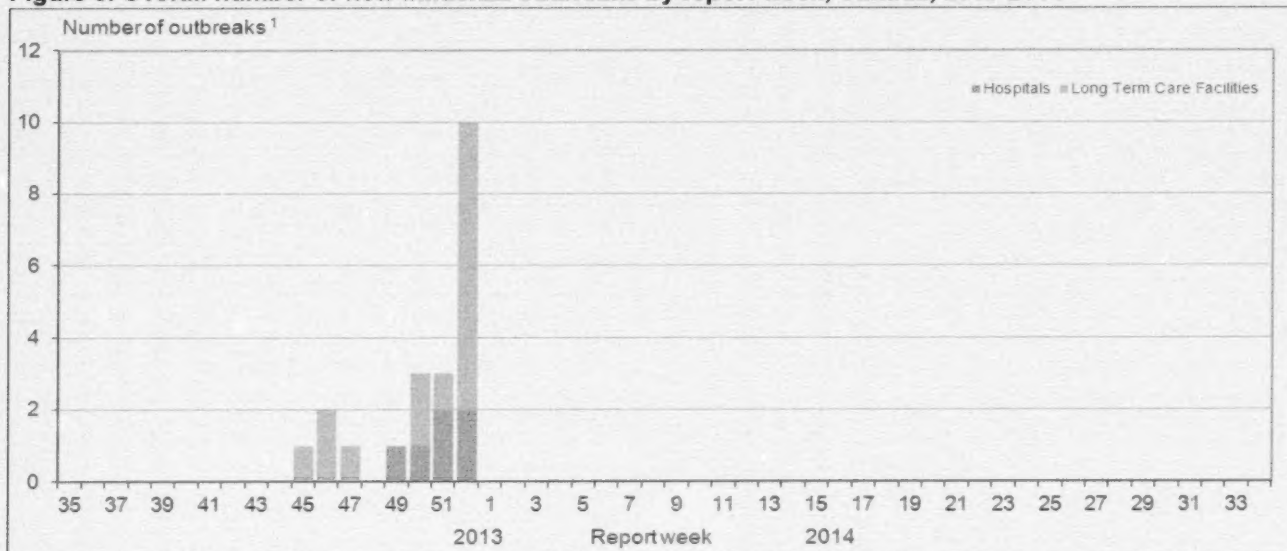


No data available for mean rate for weeks 19 to 39 for the 1996-1997 through 2002-2003 seasons. Delays in the reporting of data may cause data to change retrospectively. The calculation of the average ILI consultation rate over 17 seasons was aligned with influenza activity in each season. In BC, AB, and SK, data is compiled by a provincial sentinel surveillance program for reporting to FluWatch. The number of sentinel physicians in each province or territory is as follows: BC(21), AB(80), SK(11), MB(18), ON(169), QC(14), NB(29), NS(26), PE(4), NL(16), NU(1), NT(14), YT(13). Not all sentinel physicians report every week.

## Influenza Outbreak Surveillance

In week 51, three new influenza outbreaks were reported: one in a long-term care facility and two in hospitals. Three additional ILI outbreaks in other facilities or communities were also reported. In week 52, ten new influenza outbreaks were reported: eight in long-term care facilities and two in hospitals (Figure 6).

**Figure 6. Overall number of new influenza outbreaks by report week, Canada, 2013-2014**

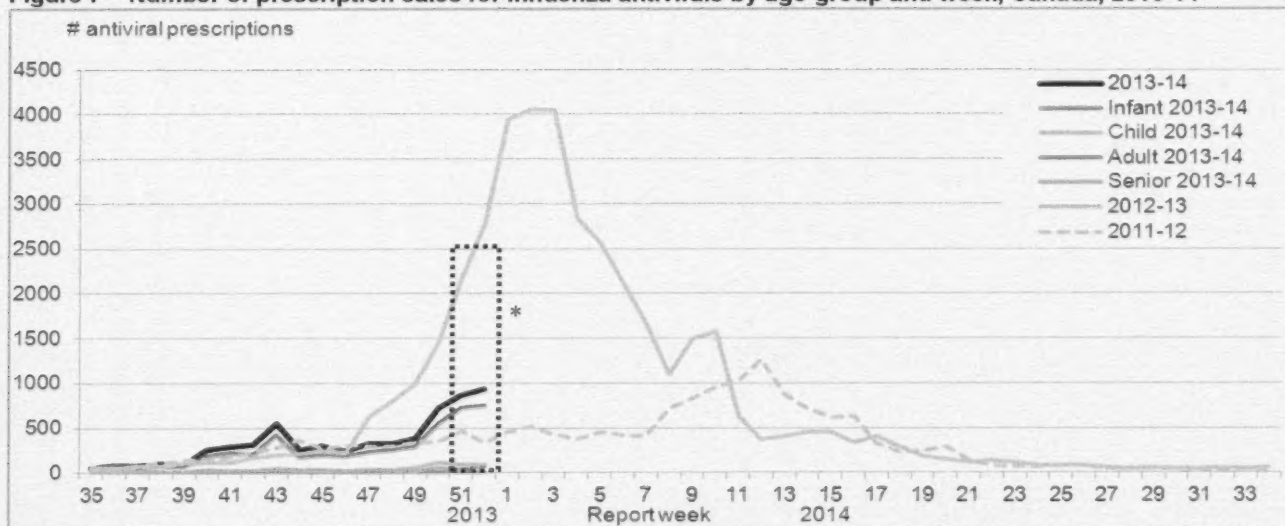


<sup>1</sup>All provinces and territories except NU report influenza outbreaks in long-term care facilities. All provinces and territories with the exception of NU and QC report outbreaks in hospitals. Outbreaks of influenza or influenza-like-illness in other facilities are reported to FluWatch but reporting varies between jurisdictions. Outbreak definitions are included at the end of the report.

## Pharmacy Surveillance

The number of prescriptions for influenza antivirals followed a trend consistent compared with previous seasons and other indicators of influenza circulation. The largest number of antiviral prescriptions is among adults 19-64 years of age, which is in keeping with the wide age range of this group as well as the age-distribution observed among laboratory detections and hospitalizations during the season to date (Figure 7).

**Figure 7 – Number of prescription sales for influenza antivirals by age-group and week, Canada, 2013-14**



Note: Pharmacy sales data are provided to the Public Health Agency of Canada by Rx Canada Inc. and sourced from major retail drug chains representing over 3,000 stores nationwide (excluding Nunavut) in 85% of Health Regions. Data provided include the number of new antiviral prescriptions (for Tamiflu and Relenza) and the total number of new prescriptions dispensed by Province/Territory and age group. Age-groups: Infant: 0-2y, Child: 2-18y, Adult: 19-64y, Senior: ≥65y

\* A delay in data reported from one retailer which provides approximately 50% of the national volume of prescriptions affects the data for the current and previous week. Data from Ontario, Saskatchewan and the Territories is most influenced by this delay.

## Sentinel Hospital Influenza Surveillance

### Paediatric Influenza Hospitalizations and Deaths (IMPACT)

The number of new laboratory-confirmed influenza-associated paediatric ( $\leq 16$  years of age) hospitalizations reported by the Immunization Monitoring Program Active (IMPACT) network continued to increase from 14 in week 50 to 37 in week 51 and 50 in week 52. Among these 87 cases, 85 (97.7%) had influenza A, and of these 38 (44.7%) were A(H1N1)pdm09, one (1.2%) A(H3N2) and 46 (54.1%) A(unknown) (Figure 8a). Thirteen cases (14.9%) were children under 6 months of age, 29 (33.3%) were 6-23 months of age, 26 (29.9%) were 2-4 years of age, 13 (14.9%) were 5-9 years of age and 6 (6.9%) were 10-16 years of age. Thirteen ICU admissions were reported in weeks 51 and 52, eight children 6-23 months of age, one 2-4 years of age, one 5-9 years of age, and three 10-16 years of age; all with influenza A.

To date this season, a total of 140 influenza-associated paediatric hospitalizations have been reported by the IMPACT network, the large majority of which have been influenza A (Table 4). Sixty (42.9%) of cases have been children under 2 years of age, and a total of 103 (73.6%) have been under 5 years of age. Eighteen ICU admissions have been reported: two cases with influenza B and 16 with influenza A (seven A(H1N1)pdm09, one A(H3N2), eight A(unknown)). The age-distribution is as follows: eight children 6-23 months of age, three 2-4 years of age, two 5-9 years of age, and five 10-16 years of age. Among the 15 ICU cases with available data, 11 were reported to have comorbidities or concurrent infection. No deaths have been reported (Figure 9a).

Note: The number of hospitalizations reported through IMPACT represents a subset of all influenza-associated paediatric hospitalizations in Canada. Delays in the reporting of data may cause data to change retrospectively.

### Adult Influenza Hospitalizations and Deaths (PCIRN)

The number of new laboratory-confirmed influenza-associated adult ( $\geq 16$  years of age) hospitalizations reported through active\* surveillance by the PHAC/CIHR Influenza Research Network (PCIRN) Serious Outcomes Surveillance (SOS) network increased from 17 in week 50 to 40 in week 51, and decreased to 21 in week 52. Among the 61 cases in this 2-week period, 58 (95.1%) were influenza A, of which 7 (12.1%) were A(H1N1)pdm09, one (1.7%) was A(H3N2) and 50 (86.2%) were A(unknown). The age-distribution is as follows: three (4.9%) cases  $< 20$  years of age, 18 (29.5%) cases 20-44 years of age, 21 (34.4%) cases 45-64 years of age and 19 (31.1%) cases  $\geq 65$  years of age. Eleven ICU admissions were reported in weeks 51 and 52: one (9.1%) case 20-44 years of age, eight (72.7%) cases 45-64 years of age, and two (18.2%) cases  $\geq 65$  years of age (Figure 8b).

To date this season, 120 influenza-associated hospitalizations have been reported by the PCIRN-SOS network, 115 (95.8%) with influenza A, predominantly A(H1N1)pdm09. The majority (73%) have been adults over 45 years of age (Table 5). ICU admission was required for 17 hospitalizations: 16 cases with influenza A (6 A(H1N1)pdm09 and 10 A(unknown)); 15 of the ICU admissions were  $> 45$  years of age. Of the 10 cases with information on influenza vaccination, 9 reported not having been vaccinated this season. No deaths have been reported (Figure 9b).

Note: PCIRN-SOS conducted passive surveillance from April 30th to November 14th, 2013. Cases reported during this period were identified by laboratory detection of influenza among patients admitted to participating hospitals. Active surveillance began November 15th during which time PCIRN site coordinators investigate cases potentially related to influenza. Data from both active and passive surveillance reported during the 2013-14 season are included in this report. The number of hospitalizations reported through PCIRN represents a subset of all influenza-associated adult hospitalizations in Canada. Delays in the reporting of data may cause data to change retrospectively.

**Table 4 – Cumulative numbers of paediatric hospitalizations with influenza reported by the IMPACT network, Canada, 2013-14**

| Age groups     | Cumulative (Aug. 25, 2013 to Dec. 28, 2013) |             |          |           |           |                   |
|----------------|---------------------------------------------|-------------|----------|-----------|-----------|-------------------|
|                | Influenza A                                 |             |          |           | B         | Influenza A and B |
|                | A Total                                     | A(H1) pdm09 | A(H3)    | A (UnS)   | Total     | # (%)             |
| 0-5m           | 22                                          | 6           | 0        | 16        | 1         | 23 (16%)          |
| 6-23m          | 36                                          | 18          | 0        | 18        | 1         | 37 (26%)          |
| 2-4y           | 38                                          | 17          | 1        | 20        | 5         | 43 (31%)          |
| 5-9y           | 20                                          | 10          | 0        | 10        | 3         | 23 (16%)          |
| 10-16y         | 12                                          | 7           | 0        | 5         | 2         | 14 (10%)          |
| <b>Total</b>   | <b>128</b>                                  | <b>58</b>   | <b>1</b> | <b>69</b> | <b>12</b> | <b>140</b>        |
| % <sup>1</sup> | 91.4%                                       | 45.3%       | 0.8%     | 53.9%     | 8.6%      | 100.0%            |

**Table 5 – Cumulative numbers of adult hospitalizations with influenza reported by the PCIRN-SOS network, Canada, 2013-14**

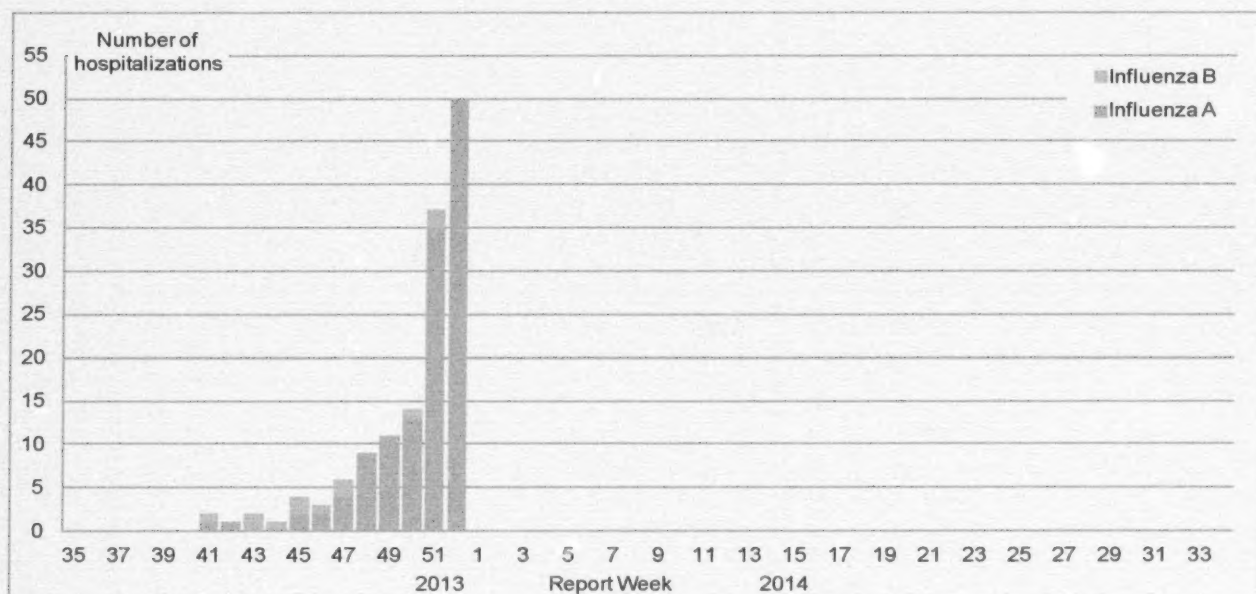
| Age groups (years) | Cumulative (Aug. 25, 2013 to Dec. 28, 2013) * |             |          |           |          |                   |
|--------------------|-----------------------------------------------|-------------|----------|-----------|----------|-------------------|
|                    | Influenza A                                   |             |          |           | B        | Influenza A and B |
|                    | A Total                                       | A(H1) pdm09 | A(H3)    | A (UnS)   | Total    | # (%)             |
| 16-20              | 5                                             | 1           | 0        | 4         | 0        | 5 (4%)            |
| 20-44              | 27                                            | 8           | 1        | 18        | 0        | 27 (23%)          |
| 45-64              | 43                                            | 14          | 1        | 28        | 2        | 45 (38%)          |
| 65+                | 40                                            | 14          | 4        | 22        | 2        | 42 (35%)          |
| <b>Total</b>       | <b>115</b>                                    | <b>37</b>   | <b>6</b> | <b>72</b> | <b>4</b> | <b>119</b>        |
| % <sup>1</sup>     | 97%                                           | 32%         | 5%       | 63%       | 3%       | 100%              |

<sup>1</sup> Percentage of tests positive for sub-types of influenza A are a percentage of all influenza A detections.

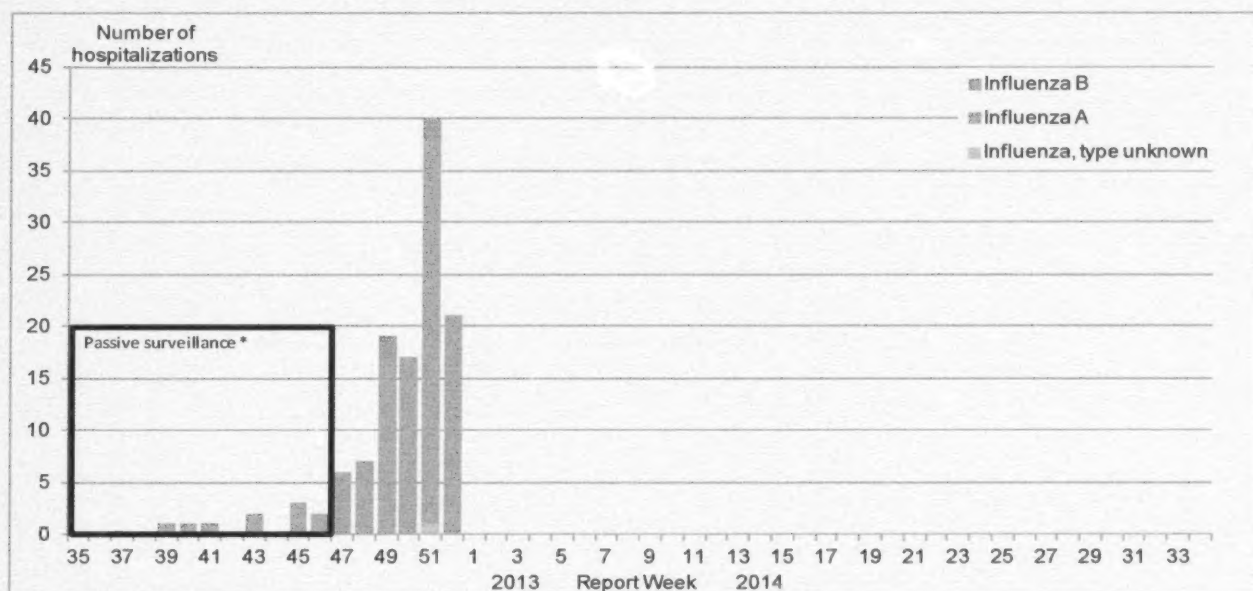
UnS: unsubtype: The specimen was typed as influenza A, but no result for subtyping was available.

\* One case for which the influenza type has not yet been reported is not included in Table 5.

**Figure 8 – Number of cases of influenza reported by sentinel hospital networks, by week, Canada, 2013-14**  
**A) Paediatric hospitalizations (≤16 years of age, IMPACT)**



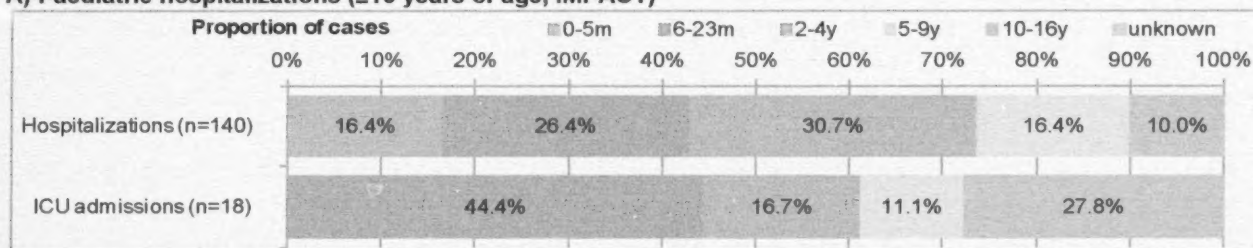
**B) Adult hospitalizations (≥16 year of age, PCIRN-SOS)**



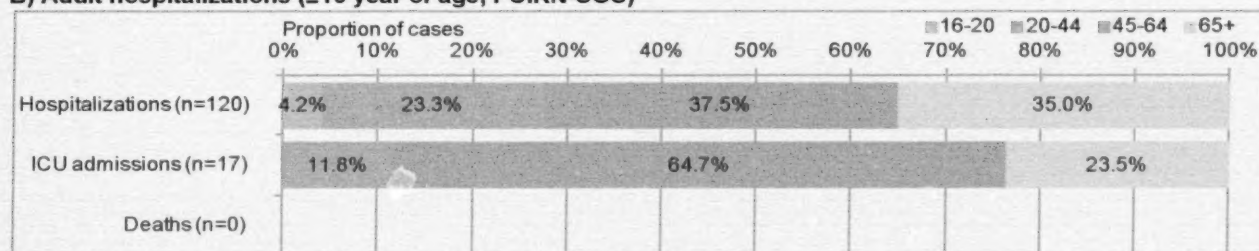
\* See footnote on page 6 following the section related to PCIRN-SOS data.

**Figure 9 – Percentage of hospitalizations, ICU admissions and deaths with influenza reported by age-group, Canada, 2013-14**

**A) Paediatric hospitalizations (≤16 years of age, IMPACT)**



## B) Adult hospitalizations (≥16 year of age, PCIRN-SOS)



## Provincial/Territorial Influenza Hospitalizations and Deaths

In weeks 51 and 52, 186 new laboratory-confirmed influenza-associated hospitalizations were reported from participating provinces and territories.\* The cases were as follows: nine children less than 6 months of age, 18 children 6-23 months, 14 children 2-4 years, nine children 5-14 years, three children 15-19 years of age, 38 adults 20-44 years, 54 adults 45-64 years and 38 adults ≥65 years of age. Age was not reported for three cases, two with A(H1N1)pdm09 and one with A(unsubtyped). The majority were cases of influenza A (181, 97.3%), of which 74 were A(H1N1)pdm09, two were A(H3N2) and 105 were A(unsubtyped). Twelve ICU admissions were reported in weeks 51 and 52, all with influenza A (five with A(H1N1)pdm09, seven with A(unsubtyped)), in one child 6-23 months of age, one 5-14 years of age, two adults 20-44 years of age, six adults 45-64 years of age, and one adult ≥65 years of age. Age information was not reported for one ICU admission. Five deaths were reported: one adult 20-44 years of age and two 45-64 years of age with influenza A(H1N1)pdm09, and two adults ≥65 years of age, with influenza A(unsubtyped) and one with influenza B. The number of new influenza-associated hospitalizations and deaths reported for the current week may include cases from Ontario that occurred in previous weeks, as a result of retrospective updates to the cumulative total.

To date this season, 486 influenza-associated hospitalizations have been reported, of which 475 (97.7%) had influenza A and among those 58.9% were A(H1N1)pdm09 (Table 6). Approximately half of cases (51.8%) were 20-64 years of age, and 22.6% were under 5 years of age. Fifty-nine ICU admissions have been reported this season, all cases of influenza A (44 A(H1N1)pdm09 and 15 A(unsubtyped)). The age-distribution of ICU admissions is as follows: five (8.5%) children 6-23 months, three (5.1%) 2-4 years of age, one (1.7%) 5-14 years of age, 15 (25.4%) adults 20-44 years of age, 30 (50.8%) adults 45-64 years of age, four (6.8%) adults ≥65 years of age, and one (1.7%) with missing age information. Seventeen deaths have been reported: two children 6-23 months, two adults 20-44 years of age, nine 45-64 years of age, and four ≥65 years of age. Thirteen deaths were associated with influenza A(H1N1)pdm09, three with A(unsubtyped), and one with influenza B. It is important to note that the hospitalization or death does not have to be attributable to influenza, a positive laboratory test is sufficient for reporting. Detailed clinical information (e.g. underlying medical conditions) is not known for these cases.

\* Note: Influenza-associated hospitalizations are not reported to PHAC by the following Provinces and Territory: BC, NU, QC, NS, and NB. Only hospitalizations that require intensive medical care are reported by Saskatchewan. ICU admissions are not distinguished among hospital admissions reported from Ontario. Data may also include cases reported by the IMPACT and PCIRN networks.

**Table 6 – Cumulative number of hospitalizations with influenza reported by the participating provinces and territories, Canada, 2013-14**

| Age groups (years)            | Cumulative (Aug. 25, 2013 to Dec. 28, 2013) * |              |             |              |             |                   |
|-------------------------------|-----------------------------------------------|--------------|-------------|--------------|-------------|-------------------|
|                               | Influenza A                                   |              |             |              | B           | Influenza A and B |
|                               | A Total                                       | A(H1) pdm09  | A(H3)       | A (UnS)      | Total       | # (%)             |
| 0-4                           | 106                                           | 54           | 4           | 48           | 3           | 109 (23%)         |
| 5-14                          | 28                                            | 15           | 1           | 12           | 2           | 30 (6%)           |
| 15-19                         | 6                                             | 4            | 0           | 2            | 0           | 6 (1%)            |
| 20-44                         | 92                                            | 56           | 0           | 36           | 0           | 92 (19%)          |
| 45-64                         | 157                                           | 103          | 8           | 46           | 1           | 158 (33%)         |
| 65+                           | 83                                            | 46           | 8           | 29           | 5           | 88 (18%)          |
| <b>Total</b>                  | <b>472</b>                                    | <b>278</b>   | <b>21</b>   | <b>173</b>   | <b>11</b>   | <b>483</b>        |
| <b>Percentage<sup>1</sup></b> | <b>97.7%</b>                                  | <b>58.9%</b> | <b>4.4%</b> | <b>36.7%</b> | <b>2.3%</b> | <b>100%</b>       |

<sup>1</sup> Percentage of tests positive for sub-types of influenza A are a percentage of all influenza A detections.

UnS: unsubtyped: The specimen was typed as influenza A, but no result for subtyping was available.

\* Three cases for which age information is not available have not been included in Table 6.

## Emerging Respiratory Pathogens

### Human Avian Influenza

Influenza A(H7N9): No new cases of human infection with influenza A(H7N9) have been reported by the World Health Organization since December 19, 2013. As of January 3, 2014, the WHO has been informed of 147 laboratory-confirmed human cases with avian influenza A(H7N9), including 47 deaths.

PHAC – Avian influenza A(H7N9)

WHO – Avian Influenza A(H7N9)

Influenza A(H9N2): One case of human infection with the novel virus influenza A(H9N2) by Hong Kong, Special Administrative Region, China. The patient is an 86 year old male with underlying medical conditions. He is a Hong Kong citizen living in Guangdong Province, China. The patient was symptomatic while crossing the border into Hong Kong. He was later admitted to hospital and tested positive with influenza A(H9N2). He has no recent history of poultry contact or consumption of undercooked poultry. Hong Kong first identified human cases of influenza A(H9N2) in 1999. The last reported human case of A(H9N2) in Hong Kong was in 2009.

### Human Swine Influenza

Influenza A(H3N2)v: No new cases of human infection with influenza A(H3N2)v were reported in week 51 or 52. In 2013, a total of 19 A(H3N2)v cases including one hospitalization were reported.

Centers for Disease Control and Prevention Influenza A(H3N2) Variant Virus

### Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

Since the FluWatch report for week 50, ten new cases of human infection with MERS-CoV have been reported by the World Health Organization in Saudi Arabia, three of whom died, and two new cases were reported in the United Arab Emirates (UAE).

In Saudi Arabia, five of the ten cases were healthcare workers, 27-52 years of age, and all were asymptomatic. Three of the healthcare workers were female. Of the remaining five male cases, all were hospitalized, and 53-73 years of age. A 53 year-old male with underlying medical conditions was a contact of another confirmed case, and a 73 year-old male with underlying medical conditions had a history of exposure to animals. The other three cases had no recent travel history or known contact with animals or another laboratory-confirmed case. Of the hospitalized cases, three subsequently died.

In the UAE, the first case was a 59 year-old female who was the contact of a previously confirmed case. She is asymptomatic and had no recent travel history or known contact with animals. The second case is a 33 year-old male healthcare worker who was a contact of a previously confirmed case. The patient has underlying medical conditions and was hospitalized in critical but stable condition.

Globally, from September 2012 to January 3, 2014, WHO has been informed of a total of 177 laboratory-confirmed cases of infection with MERS-CoV, including 74 deaths. All cases have either occurred in the Middle East or have had direct links to a primary case infected in the Middle East.

PHAC – Middle East respiratory syndrome coronavirus (MERS-CoV)

WHO – Coronavirus infections

## International Influenza Reports

World Health Organization influenza update

World Health Organization FluNet

WHO Influenza at the human-animal interface

Centers for Disease Control and Prevention seasonal influenza report

EuroFlu weekly electronic bulletin

European Centre for Disease Prevention and Control - epidemiological data

South Africa Influenza surveillance report

New Zealand Public Health Surveillance

Australia Influenza Report

Pan-American Health Organization Influenza Situation Report

## FluWatch Definitions for the 2013-2014 Season

**Abbreviations:** Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU).

**Influenza-like-illness (ILI):** Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

### ILI/Influenza outbreaks

- **Schools:** Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.
- **Hospitals and residential institutions:** two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case. Institutional outbreaks should be reported within 24 hours of identification. Residential institutions include but not limited to long-term care facilities (LTCF) and prisons.
- **Workplace:** Greater than 10% absenteeism on any day which is most likely due to ILI.
- **Other settings:** two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. closed communities.

Note that reporting of outbreaks of influenza/ILI from different types of facilities differs between jurisdictions.

### Influenza/ILI Activity Levels

- 1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported
- 2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†
- 3 = Localized: (1) evidence of increased ILI\* ;  
(2) lab confirmed influenza detection(s);  
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region†**
- 4 = Widespread: (1) evidence of increased ILI\* ;  
(2) lab confirmed influenza detection(s);  
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **greater than or equal to 50% of the influenza surveillance region†**

Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.

\* More than just sporadic as determined by the provincial/territorial epidemiologist.

† Influenza surveillance regions within the province or territory as defined by the provincial/territorial epidemiologist.

*We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.*

This report is available on the Public Health Agency website at the following address: <http://www.phac-aspc.gc.ca/fluwatch/index.html>.

Ce rapport est disponible dans les deux langues officielles.